

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

Claims 1-26, 46 and 47 remain in the application. Claims 1, 46 and 47 have been amended herein.

Claim 1 has been amended to better describe the orientation of the cutting edges of the claimed implant. Specifically, the claim language distinguishes the cutting edges from typical screw threads, which are shown in the cited references to Schulte, Lang and Lazarof and incorporated in the rejection of the present claims. In contrast, and as can be seen in Applicant's Fig. 2 (reproduced below) as well as the description of the specification (at least paragraph [0015] of the substitute specification), the claimed cutting edges do not point inward generally horizontally like a screw thread, but instead point downward. In the amended claims this is shown in the statement regarding "cutting edges facing toward a distal end region" and as a result being "chip forming cutting edges". In operation the claimed cutting edge creates a chip(s) as it is pushed into place along the implant axis. In contrast, the common screw thread cuts inwardly in a general horizontal direction, and does not create a chip, or at least not a chip that is similar to that made by the claimed cutting edge. Instead, the screw thread causes a compression of the bone material on either side of its cutting edge.

Independent claims 46 and 47 have been amended in a similar manner.

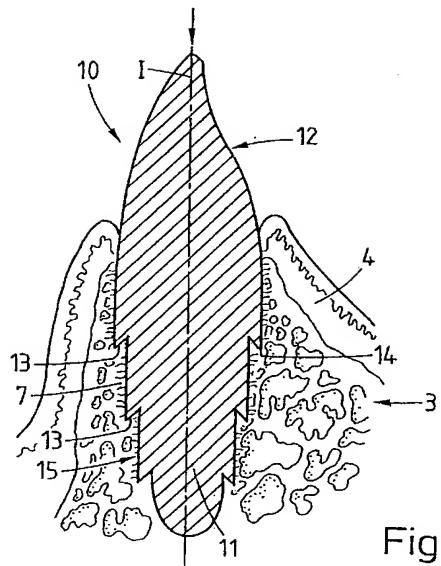


Fig. 2

Claims 1-19, 21-26 and 46-47 stand rejected under 35 U.S.C. §103(a) as being unpatentable over WO/02069817 to Aeschlimann et al (hereinafter Aeschlimann) in view of U.S. 5,199,873 to Schulte et al. (hereinafter Schulte) and U.S. 5,088,926 to Lang (hereinafter Lang). For the following reasons, the rejection is traversed.

Applicant believes that as the combination of references is presented in the Office action, the features of the claimed device are not taught or suggested. Schulte and Lang each teach screw threads. The Office action states on page 3 that Aeschlimann fails to teach cutting edges that are capable of cutting the cavity wall of bone tissue and as such imports the self tapping screw threads of Schulte in order to accomplish this requirement. Applicant maintains that the edges on either side of the device of Aeschlimann are not cutting edges, as Aeschlimann discloses noting about them. Aeschlimann, in Fig. 22, depicts the same implant prior and after implantation: the protruding edges are pointing upwards prior to the application of

ultrasound (left side) and they are point downwards after the application of ultrasound in the implanted state (right side). This is not consistent with an interpretation of the protruding spikes as being cutting edges.

Applicant believes that in order to incorporate that thread configuration of Schulte into the device of Aeschlimann, certain features of Aeschlimann are lost. Specifically, the exterior structure of the device 22 in Aeschlimann is lost if the threads of Schulte (or Lang) are incorporated into the device. Simply, the orientation of a cutting edge on a screw thread (pointing inwards in relation to the bone material) is inconsistent with the orientation disclosed in Aeschlimann.

Thus, when Schulte is incorporated with Aeschlimann, the combination lacks “chip forming cutting edges” these cutting edges “facing toward a distal end region of the implant” which is required by the independent claims.

It is not possible to drive a self-cutting screw type implant into the bone tissue in a movement parallel to the implant axis without an inherent lateral component as part of the rotational movement.

In contrast to the proposed combination, the claimed cutting edges are pushed into the bone tissue substantially without rotation and remove chips from the bone tissue surrounding the implant cavity (see for example Fig. 6 of Applicant’s specification. A self cutting screw thread will not form such a chip, but instead cuts and compresses the bone material into which the screw thread laterally cuts.

Additionally, regarding claim 46, it is believed that the proposed combination of references does not teach or suggest:

Wherein the implant portion to be implanted comprises a first type of surface ranges of a material, which is liquefiable by mechanical oscillation, and

The implant portion to be implanted comprises cutting edges being located outside of the surface ranges of liquefiable material provided

As stated in previous amendments, Applicant believes that Aeschlimann does not teach the required surface ranges of material as the material 44 in Aeschlimann is located inside of the implant, but not on the outside surface.

Finally, in column, 1, line 28, Aeschlimann discusses the self-cutting screws of the state of the art, and on line 35 mentions the disadvantage of the large torsional forces to be applied on implantation of such self-cutting screws and of the generation of considerable heat produced during frictional engagement. Thus Aeschlimann teaches away from combining self-cutting screws with the devices disclosed therein.

Thus, reconsideration and withdrawal of the rejection of independent claims 1, 46 and 47, as well as dependent claims 2-19 and 21-26 as being over unpatentable over Aeschlimann in view of Schulte and Lang.

Claim 20 stands rejected under 35 U.S.C. §103(a) as being unpatentable over WO/02069817 to Aeschlimann et al (hereinafter Aeschlimann) in view of U.S. 5,199,873 to Schulte et al. (hereinafter Schulte) and U.S. 5,088,926 to Lang (hereinafter Lang) and further in view of U.S. 6,142,782 to Lazarof. For the following reasons, the rejection is traversed.

As stated above, when combined Aeschlimann, Schulte, and Lang produce a device including typical screw-type threads. Lazarof also only discloses this type of thread. Thus, as claim 20 depends indirectly from claim 1, claim 20 is believed to be allowable at least for the same reasons stated above with regard to claim 1.

Reconsideration and withdrawal of the rejection of claim 20 under 35 U.S.C.

§103(a) is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. FRG-15998.

Respectfully submitted,

RANKIN, HILL & CLARK LLP

By /James A. Balazs/
James A. Balazs, Reg. No. 47401

38210 Glenn Avenue
Willoughby, Ohio 44094-7808
(216) 566-9700